

## SEQUENCE LISTING

<110> Istituto Superiore di Sanità  
 National Institutes of Health  
 <120> COLORECTAL ANTIGEN  
 <130> WPP88367  
 <150> US 60/512,040  
 <151> 2003-10-15  
 <160> 20  
 <170> PatentIn version 3.3  
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 Met Ala Phe Met Thr Arg Lys Leu Trp  
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 Asp Leu Glu Gln Gln Val Lys Ala Gln Thr Asp Glu Ile Leu Ser Lys  
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 gat cag aag ata gcg gcc cta gag gac ctg gtg cag acc ctc cgg cca 207  
 Asp Gln Lys Ile Ala Ala Leu Glu Asp Leu Val Gln Thr Leu Arg Pro  
 30 35 40  
  
 cac cca gcc gag gca acc ctg cag cgg cag gag gaa ctg gag acg atg 255  
 His Pro Ala Glu Ala Thr Leu Gln Arg Gln Glu Leu Glu Thr Met  
 45 50 55  
  
 tgt gtg cag ctg cag cgg cag gtc agg gag atg gag cgg ttc ctc agt 303  
 Cys Val Gln Leu Gln Arg Gln Val Arg Glu Met Glu Arg Phe Leu Ser  
 60 65 70  
  
 gac tat ggc ctg cag tgg gtg ggc gag ccc atg gac cag gag gac tca 351  
 Asp Tyr Gly Leu Gln Trp Val Gly Glu Pro Met Asp Gln Glu Asp Ser  
 75 80 85  
  
 gag agc aag aca gtc tca gag cat ggc gag agg gac tgg atg aca gcc 399  
 Glu Ser Lys Thr Val Ser Glu His Gly Glu Arg Asp Trp Met Thr Ala  
 90 95 100 105  
  
 aag aag ttc tgg aag cca ggg gac tca ttg gcg ccc cct gag gtg gac 447  
 Lys Lys Phe Trp Lys Pro Gly Asp Ser Leu Ala Pro Pro Glu Val Asp  
 110 115 120  
  
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acc ctc gag ccc atc ccg ctg aag ctc tac cgg aat ggc atc atg atg Thr Leu Glu Pro Ile Pro Leu Lys Leu Tyr Arg Asn Gly Ile Met Met 155 160 165			591
ttc gac ggg ccc ttc cag ccc ttc tac gat ccc tcc aca cag cgc tgc Phe Asp Gly Pro Phe Gln Pro Phe Tyr Asp Pro Ser Thr Gln Arg Cys 170 175 180 185			639
ctc cga gac ata ttg gat ggc ttc ttt ccc tca gag ctc cag cga ctg Leu Arg Asp Ile Leu Asp Gly Phe Phe Pro Ser Glu Leu Gln Arg Leu 190 195 200			687
tac ccc aat ggg gtc ccc ttt aag gtg agt gac ttg cgc aat cag gtc Tyr Pro Asn Gly Val Pro Phe Lys Val Ser Asp Leu Arg Asn Gln Val 205 210 215			735
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acc ttg cag aac tgc tgc cca ttg cct gcc cgg atc cag gag att gtg Thr Leu Gln Asn Cys Cys Pro Leu Pro Ala Arg Ile Gln Glu Ile Val 285 290 295			975
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ccc aac aca ccg gca ccc ccg ctc tcc atg ctg cgc atc aag tct gag Pro Asn Thr Pro Ala Pro Pro Leu Ser Met Leu Arg Ile Lys Ser Glu 315 320 325			1071
aat ggg gaa cag gcc ttc cta ctg atg atg cag cct gac aac acc att Asn Gly Glu Gln Ala Phe Leu Leu Met Met Gln Pro Asp Asn Thr Ile 330 335 340 345			1119
ggg gac gtg cga gct ctg cta cgc cag gcc agg gtc atg gat gcc tct Gly Asp Val Arg Ala Ile Leu Ala Gln Ala Arg Val Met Asp Ala Ser 350 355 360			1167
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aca ctc acg ctg cag gct gca ggc ctt gtg ccc aaa gca gca ctg ctg Thr Leu Thr Leu Gln Ala Ala Gly Leu Val Pro Lys Ala Ala Leu Leu 380 385 390			1263
ctg cgg gca cgc cga gcc ccg aag tcc agc ctg aaa ttc agt cct ggt Leu Arg Ala Arg Arg Ala Pro Lys Ser Ser Leu Lys Phe Ser Pro Gly			1311

395	400	405	
ccc tgt ccc ggt ccc ggt ccc ggc ccc agt ccc ggt ccc ggt ccc ggc Pro Cys Pro Gly Pro Gly Pro Gly Pro Ser Pro Gly Pro Gly Pro Gly 410 415 420 425			1359
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<pre> Pro Val Pro Gly Gly Ala Arg Leu Arg Thr Leu Glu Pro Ile Pro Leu 145 150 155 160 </pre>			
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<pre> Phe Tyr Asp Pro Ser Thr Gln Arg Cys Leu Arg Asp Ile Leu Asp Gly 180 185 190 </pre>			

Phe Phe Pro Ser Glu Leu Gln Arg Leu Tyr Pro Asn Gly Val Pro Phe  
195 200 205

Lys Val Ser Asp Leu Arg Asn Gln Val Tyr Leu Glu Asp Gly Leu Asp  
210 215 220

Pro Phe Pro Gly Glu Gly Arg Val Val Gly Arg Gln Arg Met His Lys  
225 230 235 240

Ala Leu Asp Arg Val Glu Glu His Pro Gly Ser Arg Met Thr Ala Glu  
245 250 255

Lys Phe Leu Asn Arg Leu Pro Lys Phe Val Ile Arg Gln Gly Glu Val  
260 265 270

Ile Asp Ile Arg Gly Pro Ile Arg Asp Thr Leu Gln Asn Cys Cys Pro  
275 280 285

Leu Pro Ala Arg Ile Gln Glu Ile Val Val Glu Thr Pro Thr Leu Ala  
290 295 300

Ala Glu Arg Glu Arg Ser Gln Glu Ser Pro Asn Thr Pro Ala Pro Pro  
305 310 315 320

Leu Ser Met Leu Arg Ile Lys Ser Glu Asn Gly Glu Gln Ala Phe Leu  
325 330 335

Leu Met Met Gln Pro Asp Asn Thr Ile Gly Asp Val Arg Ala Leu Leu  
340 345 350

Ala Gln Ala Arg Val Met Asp Ala Ser Ala Phe Glu Ile Phe Ser Thr  
355 360 365

Phe Pro Pro Thr Leu Tyr Gln Asp Asp Thr Leu Thr Leu Gln Ala Ala  
370 375 380

Gly Leu Val Pro Lys Ala Ala Leu Leu Leu Arg Ala Arg Arg Ala Pro  
385 390 395 400

Lys Ser Ser Leu Lys Phe Ser Pro Gly Pro Cys Pro Gly Pro Gly Pro  
405 410 415

Gly Pro Ser Pro Gly Pro Gly Ser Ser Pro Cys Pro Gly Pro  
420 425 430

Ser Pro Ser Pro Gln  
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<212> DNA  
<213> Homo sapiens

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<212> PRT  
<213> Homo sapiens

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Gln Ala Ala Gly  
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accctctacc aggacgatac actcacgctg caggctgcag gc 42

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<211> 14  
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Thr Leu Tyr Gln Asp Asp Thr Leu Thr Leu Gln Ala Ala Gly  
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ggggactcat tggcgccccc tgaggtggac tttgacaggc tgctggccag cctgcaggat 180  
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10	15		

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30			

Thr Ala Lys Lys Phe Trp Lys Pro Gly Asp Ser Leu Ala Pro Pro Glu			
35	40	45	
45			

Val Asp Phe Asp Arg Leu Leu Ala Ser Leu Gln Asp Leu Ser Glu Leu			
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60			

Val Val Glu Gly Asp Thr Gln Val Thr Pro Val Pro Gly Gly Ala Arg			
65	70	75	80
75	80		

Leu Arg Thr Leu Glu Pro Ile Pro Leu Lys Leu Tyr Arg Asn Gly Ile			
85	90	95	
95			

Met Met Phe Asp Gly Pro Phe Gln Pro Phe Tyr Asp Pro Ser Thr Gln			
100	105	110	
110			

Arg Cys Leu Arg Asp Ile Leu Asp Gly Phe Phe Pro Ser Glu Leu Gln			
115	120	125	
125			

Arg Leu Tyr Pro Asn Gly Val Pro Phe Lys Val Ser Asp Leu Arg Asn			
130	135	140	
140			

Gln Val Tyr Leu Glu Asp Gly Leu Asp Pro Phe Pro Gly Glu Gly Arg			
145	150	155	160
155	160		

Val Val Gly Arg Gln Arg Met His Lys Ala Leu Asp Arg Val Glu Glu			
165	170	175	
175			

His Pro Gly Ser Arg Met Thr Ala Glu Lys Phe Leu Asn Arg Leu Pro			
180	185	190	
190			

Lys Phe Val Ile Arg Gln Gly Glu Val Ile Asp Ile Arg Gly Pro Ile  
195 200 205

Arg Asp Thr Leu Gln Asn Cys Cys Pro Leu Pro Ala Arg Ile Gln Glu  
210 215 220

Ile Val Val Glu Thr Pro Thr Leu Ala Ala Glu Arg Glu Arg Ser Gln  
225 230 235 240

Glu Ser Pro Asn Thr Pro Ala Pro Pro Leu Ser Met Leu Arg Ile Lys  
245 250 255

Ser Glu Asn Gly Glu Gln Ala Phe Leu Leu Met Met Gln Pro Asp Asn  
260 265 270

Thr Ile Gly Asp Val Arg Ala Leu Leu Ala Gln Ala Arg Val Met Asp  
275 280 285

Ala Ser Ala Phe Glu Ile Phe Ser Thr Phe Pro Pro Thr Leu Tyr Gln  
290 295 300

Asp Asp Thr Leu Thr Leu Gln Ala Ala Gly Leu Val Pro Lys Ala Ala  
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Leu Leu Leu Arg Ala Arg Ala Pro Lys Ser Ser Leu Lys Phe Ser  
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Pro Gly Pro Cys Pro Gly Pro  
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<212> PRT  
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<210> 10  
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 cttgtgcca aagcagcaact gctgctgcgg gcacgcccag ccccgaagtc cagcctgaaa 180  
 ttcagtctg gtccctgtcc cggtcccggt cccggccca gtcccggtcc cggtcccgcc 240  
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 <212> PRT  
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Ala Phe Glu Ile Phe Ser Thr Phe Pro Pro Thr Leu Tyr Gln Asp Asp  
 20 25 30

Thr Leu Thr Leu Gln Ala Ala Gly Leu Val Pro Lys Ala Ala Leu Leu  
 35 40 45

Leu Arg Ala Arg Arg Ala Pro Lys Ser Ser Leu Lys Phe Ser Pro Gly  
 50 55 60

Pro Cys Pro Gly Pro Gly Pro Gly Pro Ser Pro Gly Pro Gly Pro Gly  
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Ser Ser Pro Cys Pro Gly Pro Ser Pro Ser Pro Gln  
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cgtttcttgg agtactctac gtc

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<212> PRT  
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Gln Ala Ala Gly  
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<212> PRT  
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<400> 18

Thr Leu Tyr Gln Asp Asp Thr Leu Thr Leu Gln Ala Ala Gly Leu Val  
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Pro Lys Ala Ala  
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aggaggaggc agataacaga aacctccaga aacctctgtg gagacagtgg aagaggcaaa 180  
agggagttcc tgacagctgg attctagaag tagaactatg agtcacaccc 240

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ccgc	atctat	ggagat	gaag	atgagg	tgga	catgtt	gagt	gatgggtgt	g	tcgg	aa	aga	360			
aa	agatctca	gtcc	cct	ct	gctat	ggc	cg	catag	gt	cc	gg	ca	gt	ccc	420	
tg	catccc	cat	gact	cg	gg	ac	tg	at	gg	cc	tt	ca	g	gg	480	
gc	aggt	gaag	gccc	agact	g	at	gag	ata	ct	gg	ca	gg	at	ag	540	
gg	ac	ct	gg	tg	g	at	gg	cc	tt	ca	gg	at	gg	ca	600	
act	gg	agac	g	at	gt	gt	tg	tc	ag	cg	ac	gg	tc	ag	660	
tg	actat	ggc	ct	gc	ag	tg	gg	tg	gg	ac	ca	gg	cc	tc	720	
agt	tct	cag	ag	at	gg	ca	g	gg	at	gg	ca	gg	gg	gg	780	
ctc	att	ggcg	cc	cc	c	tt	gagg	tt	tg	actt	tg	ct	gc	agg	tt	840
tg	ag	ct	gg	tg	tg	tt	tg	tt	tg	at	tc	tc	tc	gg	tg	900
tac	cc	c	cc	tc	g	cc	at	cc	tc	ta	cc	gg	at	gg	cc	960
ctt	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1020
ctt	tt	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1080
cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1140
gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	1200
gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	gg	1260
g	ac	at	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1320
tg	ac	at	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1380
cc	ag	at	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1440
ac	cc	ca	ca	ca	ca	ca	ca	ca	ca	ca	ca	ca	ca	ca	ca	1500
gg	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1560
ct	ac	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1620
ct	ac	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1680
tc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1740
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 <213> Homo sapiens

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35 40 45

Lys Ile Ser Val Pro Ser Cys Tyr Gly Gly Ile Gly Ala Pro Val Ser  
50 55 60

Arg Gln Val Pro Ala Ser His Asp Ser Glu Leu Met Ala Phe Met Thr  
65 70 75 80

Arg Lys Leu Trp Asp Leu Glu Gln Gln Val Lys Ala Gln Thr Asp Glu  
85 90 95

Ile Leu Ser Lys Asp Gln Lys Ile Ala Ala Leu Glu Asp Leu Val Gln  
100 105 110

Thr Leu Arg Pro His Pro Ala Glu Ala Thr Leu Gln Arg Gln Glu Glu  
115 120 125

Leu Glu Thr Met Cys Val Gln Leu Gln Arg Gln Val Arg Glu Met Glu  
130 135 140

Arg Phe Leu Ser Asp Tyr Gly Leu Gln Trp Val Gly Glu Pro Met Asp  
145 150 155 160

Gln Glu Asp Ser Glu Ser Lys Thr Val Ser Glu His Gly Glu Arg Asp  
165 170 175

Trp Met Thr Ala Lys Lys Phe Trp Lys Pro Gly Asp Ser Leu Ala Pro  
180 185 190

Pro Glu Val Asp Phe Asp Arg Leu Leu Ala Ser Leu Gln Asp Leu Ser  
195 200 205

Glu Leu Val Val Glu Gly Asp Thr Gln Val Thr Pro Val Pro Gly Gly  
210 215 220

Ala Arg Leu Arg Thr Leu Glu Pro Ile Pro Leu Lys Leu Tyr Arg Asn  
225 230 235 240

Gly Ile Met Met Phe Asp Gly Pro Phe Gln Pro Phe Tyr Asp Pro Ser  
245 250 255

Thr Gln Arg Cys Leu Arg Asp Ile Leu Asp Gly Phe Phe Pro Ser Glu  
260 265 270

Leu Gln Arg Leu Tyr Pro Asn Gly Val Pro Phe Lys Val Ser Asp Leu  
275 280 285

Arg Asn Gln Val Tyr Leu Glu Asp Gly Leu Asp Pro Phe Pro Gly Glu  
290 295 300

Gly Arg Val Val Gly Arg Gln Arg Met His Lys Ala Leu Asp Arg Val  
305 310 315 320

Glu Glu His Pro Gly Ser Arg Met Thr Ala Glu Lys Phe Leu Asn Arg  
325 330 335

Leu Pro Lys Phe Val Ile Arg Gln Gly Glu Val Ile Asp Ile Arg Gly  
340 345 350

Pro Ile Arg Asp Thr Leu Gln Asn Cys Cys Pro Leu Pro Ala Arg Ile  
355 360 365

Gln Glu Ile Val Val Glu Thr Pro Thr Leu Ala Ala Glu Arg Glu Arg  
370 375 380

Ser Gln Glu Ser Pro Asn Thr Pro Ala Pro Pro Leu Ser Met Leu Arg  
385 390 395 400

Ile Lys Ser Glu Asn Gly Glu Gln Ala Phe Leu Leu Met Met Gln Pro  
405 410 415

Asp Asn Thr Ile Gly Asp Val Arg Ala Leu Leu Ala Gln Ala Arg Val  
420 425 430

Met Asp Ala Ser Ala Phe Glu Ile Phe Ser Thr Phe Pro Pro Thr Leu  
435 440 445

Tyr Gln Asp Asp Thr Leu Thr Leu Gln Ala Ala Gly Leu Val Pro Lys  
450 455 460

Ala Ala Leu Leu Arg Ala Arg Arg Ala Pro Lys Ser Ser Leu Lys  
465 470 475 480

Phe Ser Pro Gly Pro Cys Pro Gly Pro Gly Pro Ser Pro Gly  
485 490 495

Pro Gly Pro Gly Ser Ser Pro Cys Pro Gly Pro Ser Pro Ser Pro Gln  
500 505 510